In the Claims:

1. (Currently amended) A composition comprising lithium (Li) and metal (M) cation exchanged zeolite wherein said cation exchanged zeolite is selected from the group consisting of $Li_xM_yX$ zeolite, $Li_xM_yLSX$ zeolite, wherein said metal (M) cation has a valence state of +1 and is selected from the group consisting of $Ag^+$, $Cu^+$, and mixtures thereof, wherein the metal cation is in the form of dispersed clusters, further wherein ~~the metal cation is presented in an atomic amount corresponding to up to about 10% of the cation sites, and wherein~~ x is greater than y, the sum of x + y is less than or equal to the number of cation sites of said zeolite, and y is greater than zero, wherein the metal cation is presented in an atomic amount corresponding to up to about 20% of the cation sites, and wherein the composition is adapted to selectively adsorb a compound at about ambient room temperature conditions.

2. (Original) The composition of claim 1 wherein M is silver.

3. (Currently amended) The composition of claim 1 wherein the total number of said cation sites is 96, and ~~Y~~ y is up to 20.

4. (Currently amended) The composition of claim 1 wherein the total number of said cation sites is 96 and ~~Y~~ y is up to 10.

5. (Currently amended) A composition comprising lithium (Li) and metal (M) cation exchanged zeolite wherein said cation exchanged zeolite is selected from the group consisting of $Li_xM_yX$ zeolite, $Li_xM_yLSX$ zeolite, wherein said metal (M) cation is silver having a valence state of +1, wherein the metal cation is in the form of dispersed clusters, further wherein x is greater than y, the sum of x + y is less than or equal to the number of cation sites of said zeolite, and y is greater than zero, and wherein the metal cation is presented in an atomic amount corresponding to up to about 20% of the cation sites, wherein the ~~The~~ composition ~~of claim 2 which~~ is

cation exchanged sodium zeolite, wherein ~~where~~ sodium is present in an atomic amount less than said silver.

6. (Original) The composition of claim 5 wherein the total number of cation sites is 96, lithium is present in an atomic amount greater than 70 and less than 96 atomic units, silver is present in an atomic amount greater than 0 and up to about 20 atomic units, and sodium is present in an atomic amount less than silver.

7. (Original) The composition of claim 1 wherein said clusters consist of partially metallic silver.

8. (Original) The composition of claim 7 wherein said clusters consist of n atoms of metal (M) collectively having a charge represented by the value n-1.

9. (Original) The composition of claim 8 wherein said clusters consist of 3 atoms of metal (M) collectively having a +2 charge, or 6 atoms of metal (M) collectively having a +5 charge.

10. (Original) The composition of claim 1 wherein said clusters consist of one selected from the group consisting of partially metallic copper and partially metallic silver.

11. (Original) The composition of claim 1 wherein M is copper.

12. (Original) The composition of claim 11 which is cation exchanged sodium zeolite where sodium is present in an atomic amount less than said copper.

13. (Original) The composition of claim 12 wherein the total number of cation sites is 96, lithium is present in an atomic amount greater than 70 and less

than 96 atomic units, copper is present in an atomic amount greater than 0 and up to about 20 atomic units, and sodium is present in an atomic amount less than copper.

14. (Currently amended) A process for selectively adsorbing nitrogen from a gas mixture thereof which comprises the step of contacting said gas mixture with an adsorbent which comprises lithium (Li) and metal (M) cation exchanged zeolite, wherein said zeolite is selected from the group consisting of $Li_xM_y$ X zeolite and $Li_xM_y$ LSX zeolite, wherein said metal (M) cation has a valence state of +1 and is selected from the group consisting of $Ag^+$, $Cu^+$, and mixtures thereof, wherein the metal cation is in the form of dispersed clusters, further wherein ~~the metal cation is presented in an atomic amount corresponding to up to about 10% of the cation sites, and wherein~~ x is greater than y, the sum of x + y is less than or equal to the number of cation sites of said zeolite, and y is greater than 0, wherein the metal cation is presented in an atomic amount corresponding to up to about 20% of the cation sites, and wherein the contacting step is carried out at about ambient room temperature conditions.

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15. (Original) The process of claim 14 wherein said zeolite is a lithium and silver exchanged sodium zeolite, said method further comprising the steps of:

contacting said gaseous mixture with said zeolite at a selected temperature and pressure, thereby producing a non-adsorbed component and a nitrogen-rich adsorbed component; and

changing at least one of said pressure and temperature to thereby release said nitrogen-rich component from said adsorbent.

16. (Currently amended) A process for preparing a composition comprising lithium and metal (M) cation exchanged zeolite where M is in the form of dispersed clusters associated with a plurality of said cation exchanged sites, said method comprising the steps of:

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a. providing a sodium zeolite selected from the group consisting of Na-X zeolite and Na-LSX zeolite;

b. exchanging a plurality of $Na^{1+}$ ions with $Li^{1+}$ ions;

c. exchanging a portion of said $Li^{1+}$ ions with $M^{1+}$ ions, wherein the $M^{1+}$ is presented in an atomic amount corresponding to up to about 10% of the cation sites;

d. heat treating the $M^{1+}$ exchanged zeolite of step (c) at a temperature of greater than about 400°C ~~degrees centigrade~~ in a non-oxidizing atmosphere to reduce a portion of said $M^{1+}$ ions to $M^0$, thereby forming said dispersed clusters;

wherein the composition is adapted to selectively adsorb a compound at about ambient room temperature conditions.

17. (Currently amended) The process of claim 16 wherein in step (c) $M^{1+}$ is $Ag^{1+}$, and step (d) is conducted at a temperature in a range of about 450°C to about 500°C.

18. (Original) The process of claim 16 wherein $M^{1+}$ is $Cu^{+1}$ and step (c) is conducted by first exchanging $Li^{1+}$ ions with $Cu^{2+}$ ions and then reducing said $Cu^{2+}$ ions to $Cu^{1+}$ ions.

19. (Original) The process of claim 16 wherein in step (d) the non-oxidizing atmosphere is an inert atmosphere or a vacuum.